This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for controlling a position of a plunger of an actuator within an actuation range, said actuation range including at least a portion of a snap-down region of said actuator, said method comprising manipulating a forced resonant frequency of ~~a~~ said plunger of said actuator, such that said plunger is prevented from entering a snap-down condition.

2. (Currently Amended) A method according to claim 1, wherein manipulating said forced resonant frequency comprises ~~for controlling an actuator, said method comprising~~ maintaining ~~a~~ said forced resonant frequency ~~of a plunger of said actuator~~ at a substantially constant value over a fractional actuation range of said plunger.

3. (Currently Amended) A method according to claim 2, wherein maintaining said forced resonant frequency comprises maintaining said forced resonant frequency ~~for controlling an actuator, said method comprising maintaining a forced resonant frequency of a plunger of said actuator substantially constant~~ at a maximum maintainable value over ~~a~~ said fractional actuation range.

4. (Currently Amended) A method according to claim 1, wherein manipulating said forced resonant frequency comprises ~~for controlling an actuator, said method comprising~~ maintaining ~~a~~ said forced resonant frequency ~~of a plunger of said actuator~~ substantially at a value of a natural mechanical resonant frequency of said plunger, said forced resonant frequency being maintained at the

value of said natural mechanical resonant frequency over ~~an~~ said actuation range.

5. (Currently Amended) A method for controlling a position of a plunger of an actuator over an actuation range including at least a portion of a snap-down region of said actuator, said method comprising:

employing an actuating impetus that is non-linear with displacement;

using displacement as the only measured feedback signal; and,

keeping a forced resonant frequency of ~~a~~ said plunger of ~~the~~ said actuator substantially constant under actuation,

whereby said plunger is prevented from entering a snap-down condition.

6. (Previously Amended) A method as in claim 5, wherein said actuating impetus is controlled by a software control algorithm.

7. (Previously Amended) A method as in claim 5, wherein said forced resonant frequency is kept substantially at a constant value over a fractional actuation range, said constant value being substantially equal to a maximum attainable oscillation frequency of said plunger under actuation over said fractional range.

8. (Previously Amended) A method as in claim 5, wherein said forced resonant frequency is maintained substantially equal to a natural mechanical resonant frequency of said plunger.

9. (Previously Amended) A method as in claim 6 comprising imposing a constant actuation gradient on said actuator as long as a desired actuating signal to said actuator is constant.

10. (Previously Amended) A method as in claim 9, wherein the forced resonant frequency is substantially equal to a maximum attainable oscillation frequency of said plunger under actuation over a fractional actuation range.

11. (Previously Amended) A method as in claim 9 wherein said forced resonant frequency is substantially equal to a natural resonant frequency of said plunger.

12. (Previously Cancelled)

13. (Previously Cancelled)

14. (Previously Amended) A method for controlling an actuator over an actuation range, said method comprising

actuating the plunger of said actuator using one of electromagnetic and electrostatic force to provide an actuating force ;

measuring a plunger displacement as a feedback signal;

obtaining a first calibration relationship of plunger displacement as a function of activating impetus;

obtaining a second calibration relationship of an actuation gradient as a function of the plunger displacement, said actuation gradient being chosen to impose a constant forced resonant frequency on said plunger at each displacement; and,

keeping said forced resonant frequency of said plunger substantially constant over said actuation range.

15. (Original) A method as in claim 14 wherein at least one of said first calibration relationship and said second calibration relationship comprises a one-dimensional look-up table.

16. (Previously Amended) A method as in any of claims 1 to 11 or 14 wherein said actuator is a microelectromechanical actuator.

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Previously Amended) A method as in claim 14, wherein said fractional actuation range includes at least a portion of a snap-down region of said actuator.

23. (Previously Amended) A method as in claim 16, wherein said fractional actuation range includes at least a portion of a snap-down region of said actuator.

24. (Previously Added) A method as in claim 5 wherein the plunger comprises a cantilever and controlling the actuator comprises deflecting the cantilever.

25. (Previously Added) A method as in claim 24 wherein the cantilever comprises a micromachined cantilever and deflecting the cantilever comprises applying an

electrostatic potential between the cantilever and an electrode.

26. (Previously Added) A method as in claim 5 wherein controlling the actuator comprises separately and concurrently controlling a displacement of the plunger and a slope of the actuating impetus with respect to the displacement of the plunger.

27. (New) A method of controlling a position of a plunger of an actuator,

wherein the plunger is subject to a linear restoring force acting to bias the plunger toward a rest position and a nonlinear actuating force acting to move the plunger away from the rest position, and the plunger is movable over an actuation range including at least a portion of a snap-down region of the actuator,

wherein, when the plunger is at an equilibrium position in the snap-down region, for a time invariant actuating force, a small displacement of the plunger away from the equilibrium position causes an increase in the actuating force greater than a corresponding increase in the restoring force,

and the method comprises:

monitoring a position of the plunger;

supplying the position of the plunger as input to a control algorithm;

dynamically varying the actuating force based on an output of the control algorithm;

wherein the dynamically varying actuating force causes a forced resonant frequency of the plunger to be such that the plunger is prevented from entering a snap-down condition.

28. (New) A method as in claim 27 wherein monitoring a position of the plunger comprises:

measuring a plunger displacement from the rest position as a feedback signal; and the method comprises:

obtaining a first calibration relationship of plunger displacement as a function of the actuating force; and,

obtaining a second calibration relationship of an actuation gradient as a function of plunger displacement, the actuation gradient being chosen to impose a constant forced resonant frequency on the plunger at each displacement.